

In the claims:

1 - 17. (Cancelled)

18. (Currently amended) A medication delivery apparatus, comprising:

a first pressurized supply of fluid in a reservoir;

a fluid conduit from the supply to an ejector head including at least one selectively disabled resistor; [[and]]

a valve operatively positioned in the fluid conduit between the supply and the ejector head; and

a programmable controller;

wherein the reservoir, the fluid conduit, and the ejector head form a fluidically connected fluid delivery unit controlled by the programmable controller and capable of operating in a first operational mode and a second maintenance mode;

wherein, in the first operational mode of the fluid delivery unit, the ejector head is operable to deliver fluid from the reservoir through the ejector head, the fluid in the ejector head and the fluid conduit being at a lower pressure relative to the fluid in the reservoir;

and wherein, in the second maintenance mode of the fluid delivery unit, the at least one resistor of the ejector head is disabled and the valve is opened to create positive pressure throughout the reservoir, the fluid conduit and the ejector head, the positive pressure purging out all remaining fluid from the fluid delivery unit by way of the disabled ejector head, the positive pressure for the second maintenance mode being generated by opening the valve and disabling the at least one selectively disabled resistor ~~other than a pressure actuated by a piezo or thermal resistive element.~~

19. (Currently amended) The apparatus according to claim 18 including a pressure regulation apparatus in the reservoir to maintain the supply of fluid in a pressurized state.

20. (Cancelled)

21. (Original) The apparatus according to claim 18 including sensor means for monitoring an operational aspect of the ejector head.

22. (Original) The apparatus according to claim 21 where the sensor means comprises a temperature sensor capable of measuring the temperature of a portion of the ejector head.

23. (Original) The apparatus according to claim 22 wherein the temperature sensor is under the control of the programmable controller.

24. (Original) The apparatus according to claim 21 wherein the sensor means comprises a counter for counting the number of times that the ejector head has been activated.

25. (Original) The apparatus according to claim 21 wherein the sensor means comprises a clock for measuring the time interval from a prior maintenance mode.

26. (Currently amended) A medication delivery apparatus, comprising:
a first pressurized supply of fluid in a reservoir;
a fluid conduit from the supply to an ejector head including at least one selectively disabled resistor; [[and]]
a first valve positioned in the fluid conduit between the supply and the ejector head;
a programmable controller capable of operating the delivery apparatus in a first operational mode wherein the ejector head is operable to deliver fluid from the

supply through the ejector head, and in a second maintenance mode wherein the at least one selectively disabled resistor of the ejector head is disabled and fluid is purged through the ejector head; [[and]]

a second pressurized supply of fluid in a reservoir;

[[,]] a second fluid conduit from the second pressurized supply of fluid to the ejector head[[,]]; and

a second valve positioned in the second fluid conduit.

27. (Original) The apparatus according to claim 26 wherein the fluid in the first pressurized supply of fluid comprises a medication.

28. (Original) The apparatus according to claim 27 wherein the fluid in the second pressurized supply of fluid comprises a maintenance fluid.

29. (Withdrawn, Currently amended) A method of nozzle maintenance for a medication delivery apparatus, ~~an inhalation system~~ comprising:

providing an ejector head having at least one selectively disabled resistor and nozzles;

coupling a reservoir of a fluid supply system to the ejector head via a fluid conduit, the reservoir having a first pressurized supply of fluid therein, the fluid supply having an operating fluid supply pressure during operation of the at least one selectively disabled resistor and the nozzles, wherein the nozzles eject aerosol;

initiating a nozzle maintenance mode by opening a valve positioned in the fluid conduit and between a reservoir of the fluid supply system and the ejector head, and disabling the at least one selectively disabled resistor; and

during the nozzle maintenance mode, supplying fluid to the drop ejection nozzles at a purge pressure different than the operating fluid supply pressure, the pressure during the nozzle maintenance mode being generated by the opening and the disabling during the nozzle maintenance mode.

30. (Withdrawn) The method according to claim 29 in which the purge pressure is greater than the operating fluid supply pressure.

31. (Withdrawn) The method according to claim 30 wherein the operating fluid supply pressure is a negative gauge pressure and the operating fluid supply pressure is a positive gauge pressure.

32. (Withdrawn, Currently amended) The method according to claim 29 wherein the step of supplying fluid to the ejector head at the operating fluid supply pressure includes the step of supplying fluid from a first fluid supply in the reservoir.

33. (Withdrawn, Currently amended) The method according to claim 32 where the step of supplying fluid to the ejection nozzles at a purge pressure includes the step of supplying fluid from a first fluid supply in the reservoir.

34. (Withdrawn, Currently amended) The method according to claim 29 including providing the fluid supply system with a first fluid supply in the reservoir and a second fluid supply in an other reservoir, and wherein the step of supplying fluid to the ejection nozzles at a purge pressure includes the step of supplying fluid from the second fluid supply.

35. (Withdrawn) The method of claim 29 further comprising monitoring operation of the ejector head and initiating the maintenance mode in response to improper operation of the ejector head.

36. (Withdrawn) The method of claim 35 including monitoring the temperature of a portion of the ejector head and initiating the maintenance mode in response to an increase in the temperature.

37. (Cancelled)

38. (Currently amended) An inhalation system₁ comprising:
an ejector head including at least one selectively disabled resistor;
a pressurizable supply of fluid in a reservoir, the reservoir having a pressure regulation apparatus that supplies fluid to the ejector head at a controllable pressure;
a fluid conduit from the reservoir to the ejector head
[[and]] a valve in the fluid conduit positioned between the reservoir and the ejector head; and
a control system;
wherein the reservoir, the fluid conduit, and the ejector head form a fluidically connected fluid delivery unit controlled by the control system, the control system being configured to control the fluid supply system in two different modes including (a) an operating mode wherein the fluid is supplied to the ejector head with an operational pressure such that the fluid in the ejector head and the fluid conduit are at a lower pressure relative to the fluid in the reservoir and (b) an ejector head purge mode wherein the at least one selectively disabled resistor of the ejector head is disabled₁ and the valve is opened to create positive pressure throughout the reservoir, the fluid conduit and the ejector head, the positive pressure purging out all remaining fluid from the fluid delivery unit by way of the disabled ejector head, the positive pressure for the ejector head purge mode being generated by opening the valve and disabling the at least one selectively disabled resistor ~~other than a pressure actuated by a piezo or thermal resistive element.~~

39. (Original) The inhalation system according to claim 38 wherein the ejector head includes thermal drop generators.

40. (Original) The inhalation system according to claim 38 wherein the fluid at the operational pressure is at a negative gauge pressure.

41. (Original) The inhalation system according to claim 40 wherein the fluid at the purge pressure is at a positive gauge pressure.

42. (Currently amended) An inhalation system, comprising:
an ejector head including at least one selectively disabled resistor;
a fluid supply system having a pressure regulation apparatus that supplies fluid to the ejector head at a controllable pressure; and
a control system configured to control the fluid supply system in two different modes including: (a) an operating mode wherein the fluid is supplied to the ejector head with an operational pressure; and (b) an ejector head purge mode wherein the at least one selectively disabled resistor is disabled, and the fluid supply pressure is at a purge pressure that is different from the operational pressure;
wherein the fluid supply system includes first and second fluids, and wherein the control system is configured for supplying the first fluid to the ejector head in the operating mode and the second fluid to the ejector head in the ejector head purge mode.

43. (Original) The inhalation system according to claim 42 in which the first fluid comprises a medication and the second fluid comprises a maintenance fluid.